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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,053	02/08/2001	Kirk D. Haller	6175-16	7556

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EXAMINER

PHAN, THAI Q

ART UNIT PAPER NUMBER

2128

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/781,053

Applicant(s)

HALLER ET AL.

Examiner

Thai Q. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to applicants' amendment filed on 02/17/2005.

Claims 1-29 are pending in the action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeClair et al, US patent no. 5,485,390.

As per claim 1, LeClair discloses a computer aided design method and a CAD system for a feature-based solid modeling for providing elements to describe and construct a physical model or a 3-D object with feature limitations very similar to the claimed invention (Summary of the Invention). According to LeClair, the CAD feature-based solid modeling method includes:

Constructing feature of a three-dimensional model of a real world object based on data input by a user (col. 5, lines 15-25, col. 6, lines 51-65, for example), and

Automatically identifying a part comprising a part model of another three dimension part configured to compatibly couple with the feature, and the part being identified based on design attributes of the feature as claimed (Figs. 2, 3, 7, 8, 9, 12, col. 7, line 15 to col. 8, line 60 col. 7, lines 15-18, lines 54-60, col. 8, lines 47-60, for

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example). LeClair does not expressly disclose the claimed three-dimensional object model for the part identified.

Practitioner in the art at the time of the invention was made would have found LeClair CAD design and feature based solid modeling for part assembly configured for compatible feature coupling above would require and imply the three-dimensional object model of the coupled part for feature connection and for compatibly coupling object components for part produce and assembly in the three dimensional environment.

As per claim 2, LeClair discloses positions for the identified part with coupling feature relationships.

As per claim 2, LeClair discloses step of automatically positioning the identified part in a coupling feature relationship (col. 7, lines 1-15).

As per claim 3, LeClair discloses part model library in the framework (14) (Figs. 1-2, col. 7, lines 16-31).

As per claims 4 and 5, LeClair discloses means for changing or adjusting part geometry to fit to other parts as claimed.

As per claim 6, LeClair discloses part features in engineering design which would inherently include part geometrical shape, and packaging part in order to assembly part/subparts (cols. 7-9, for part assembly) or fastening part together to complete the design model as claimed. This part fastening is well known in the art in order to render final assembly.

As per claim 7, LeClair discloses a computer aided design method and a CAD system for a feature-based solid modeling for providing elements to describe and

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construct a physical model or a 3-D object with feature limitations very similar to the claimed invention (Summary of the Invention). According to LeClair, the CAD feature-based solid modeling method includes:

Constructing feature of a three-dimensional model of a real world object based on data input by a user (col. 5, lines 15-25, col. 6, lines 51-65, for example), and

Automatically identifying a part comprising a part model of another three dimension part configured to compatibly couple with the feature, and the part being identified based on design attributes of the feature as claimed (Figs. 2, 3, 7, 8, 9, 12, col. 7, line 15 to col. 8, line 60 col. 7, lines 15-18, lines 54-60, col. 8, lines 47-60, for example). LeClair does not expressly disclose the claimed feature of three-dimensional object model for the identified part.

Practitioner in the art at the time of the invention was made would have found LeClair CAD design with feature coupled modeling for solid part assembly with compatible feature coupling above would require and imply the claimed three-dimensional object model of the coupled part for feature connection and for compatibly coupling object components based on feature interaction or coupling as disclosed in LeChair above for part produce and assembly in the three dimensional environment.

As per claim 8, LeClair discloses a step of automatically positioning the selected part in package relationship or coupling as claimed.

As per claims 9, 10, and 11, LeClair discloses parts or components geometry and part library to support for user design (Figs. 18, 20 and 21, col. 8, lines 19-60, col. 10, lines 13-41).

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As per claim 12, LeClair discloses a computer aided design method and a CAD system for construction of a model with feature limitations very similar to the claimed invention (Summary of the Invention). According to LeClair, the CAD modeling method includes:

Constructing and selecting feature of a three-dimensional model of a real world object based on data input by a user (col. 5, lines 15-25, col. 6, lines 51-65, for example),

Generating a component configured to couple with the feature of a second object, and

Automatically identifying or querying a part comprising a part model of another three dimension part configured to compatibly couple with the feature, and the part being identified based on design attributes of the feature as claimed (col. 7, line 15 to col. 8, line 60). LeClair does not expressly disclose the claimed three- dimensional object model for the identified or queried part.

Practitioner in the art at the time of the invention was made would have found LeClair disclosure of the part model configured to compatibly couple feature above, particularly, in Figs. 8, 9, 14, showing feature type, feature coupling to generate object model in the CAD design and modeling system would imply the three-dimensional object model of the coupled part for feature connection and interactions and for compatibly coupling object components in the part design and modeling.

As per claim 13, LeClair discloses configuration data with an instance of the component model and modifiable attribute of the model as claimed (col. 7, line 15 to col. 8, lines 18, for exemplary).

As per claims 14-22, LeClair discloses the claimed features in CMS (Figs. 17-21, cols. 7, 8, and 10) in order to provide user with tools to design a project model.

As per claim 23, LeClair discloses a computer aided design method and a CAD system for a feature-based solid modeling for providing elements to describe and construct a physical model or a 3-D object with feature limitations very similar to the claimed invention (Summary of the Invention). According to LeClair, the CAD feature-based solid modeling method includes:

Constructing feature of a three-dimensional model of a real world object based on data input by a user (col. 5, lines 15-25, col. 6, lines 51-65, for example), and

Automatically identifying a part comprising a part model of another three dimension part configured to compatibly couple with the feature, and the part being identified based on design attributes of the feature as claimed (Figs. 2, 3, 7, 8, 9, 12, col. 7, line 15 to col. 8, line 60, col. 7, lines 15-18, lines 54-60, col. 8, lines 47-60, for example). LeClair does not expressly disclose the claimed feature of three-dimensional object model for the identified part.

Practitioner in the art at the time of the invention was made would have found LeClair disclosure of the part model configured to compatibly couple feature above in the CAD design modeling would imply the three-dimensional object model of the

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coupled part for feature connection and for compatibly coupling object components to produce quality part in the three dimensional environment.

As per claim 24, LeClair discloses part packages to assembly parts and subcomponents (Figs. 2, 4, col. 7, lines 1-15, col. 8, lines 47-61) would imply a fastener part model as claimed to create or model a complete part as shown in Figs. 2, 4, cols. 11 and 12, for example. This part fastening feature is well known in the feature based solid modeling computer aided design system because the system couples feature parts together or fastening them together to meet design product and requirements.

As per claim 25, LeClair discloses a method and system for designing and modeling objects in a computer aided system with feature limitation identical to the claimed invention (Summary of the Invention). According to LeClair, the CAD modeling method includes:

Constructing and selecting feature of a three-dimensional model of a real world object based on data input by a user (col. 5, lines 15-25, col. 6, lines 51-65, col. 7, lines 15-18, for example),

Generating a component configured to couple with the feature of a second object, and

Automatically identifying or querying a part comprising a part model of another three dimension part configured to compatibly couple with the feature, and the part being identified based on design attributes of the feature as claimed (Figs. 2, 3, 7, 8, 9, 12, col. 7, line 15 to col. 8, line 60 col. 7, lines 15-18, lines 54-60, col. 8, lines 47-60,

for example). LeClair does not expressly disclose the claimed feature of three-dimensional object model for the identified or queried part.

Practitioner in the art at the time of the invention was made would have found LeClair disclosure of the part model configured to compatibly couple feature above for CAD design modeling would imply the three-dimensional object model of the coupled part for feature connection and for compatibly coupling object components to produce quality part for the three dimensional environment.

As per claim 26, LeClair discloses means to automatically positioning part or subpart into the model with design feature as claimed.

As per claims 27-29, LeClair discloses the claimed limitations in the machine part design and modeling (Figs. 2, 4, cols. 7-9) to model assembly part in computer aided design system.

Response to Arguments

Applicant's arguments filed 02/19/2005 have been fully considered but they are not persuasive.

In response to applicants' argument LeChair does not disclose or suggest that upon retrieving parts from memory the parts are coupled to a feature belong to another object (page 3), the examiner disagrees with.

LeChair discloses a method and system for a feature based solid modeling and designing a discrete mechanical part as claimed (col. 7, lines 15-24). According to LeChair the feature based solid modeling and designing includes retrieving parts from a memory wherein the retrieval parts include part feature, feature types, critical dimension

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of the feature type, feature interaction, interfeature associations and interactions, captured feature, etc to associate with and being compatible to other objects to generate a complete part for the design (Figs. 9, 14, 18, col. 7, lines 15-18, lines 54-60, col. 8, lines 47-60, for example). This feature based solid modeling as in LeChair would be used in many design applications. One of such design options is to design feature compatibility for part assembly, fixture planning, drilling for compatible features, etc.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. US patent no. 6,629,065 issued to Gadh et al, on Sept. 2003

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Thai Phan whose telephone number is 571-272-3783. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached on 571-272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 02, 2005


Thai Phan
Patent Examiner
AU: 2128